NASA Innovative Advanced Concepts

NIST in Space: Better Remote Sensors for Better Science

Completed Technology Project (2012 - 2013)

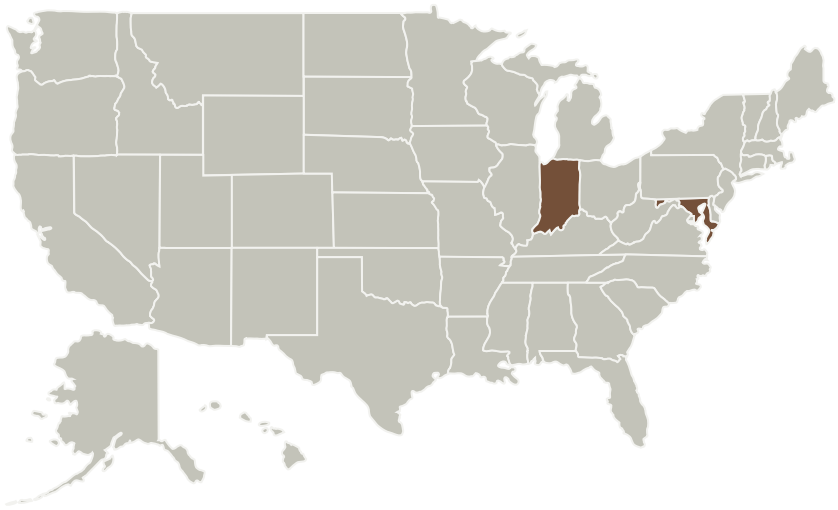
Project Introduction

This NASA Innovative Research Grant activity conducts engineering analysis to demonstrate the feasibility and advantages of applying a breakthrough remote sensor calibration concept to a wide range of future NASA remote sensor science missions, e.g., PACE, GEO-CAPE, CLARREO, HySpIRI, GACM and Heliophysics research.

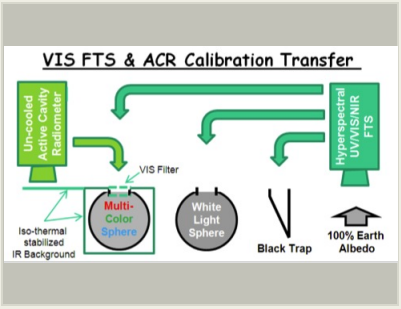
Anticipated Benefits

Commercialization of the concept for use in electro-optic laboratories worldwide is foreseen. Any scientific application requiring precision photon flux measurements in the 250 - 3000 nm wavelength range will benefit.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
ITT Exelis Geospatial Systems	Lead Organization	Industry	
ITT Space Systems, LLC	Supporting Organization	Industry	Rochester, New York
L-1 Standards and Technology, Inc.	Supporting Organization	Industry	



Project Image NIST in Space: Better Remote Sensors for Better Science

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Primary U.S. Work Locations	
Indiana	Maryland

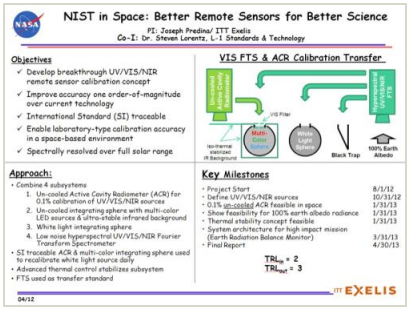
Project Transitions

September 2012: Project Start

June 2013: Closed out

Closeout Summary: The objective of this research was to determine feasibility of improving measurement accuracy of space based remote sensors operating in the UV/VIS/NIR bands (250 nm - 3000 nm) by an order of magnitude over tech nology currently used in space and in electro-optic laboratories throughout the world. Improvements in measurement accuracy are needed to benefit a broad r ange of science in the field. Specifically, our objective was to devise a practical s ystem architecture that could achieve measurement accuracies comparable to th e National Institute of Standards and Technology (NIST) while operating in a sp ace flight environment.

Images



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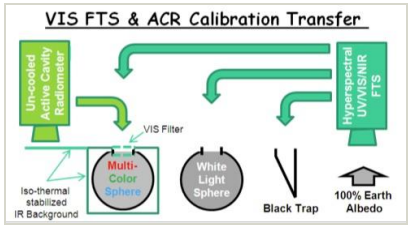
Project Image NIST in Space: Better Remote Sensors for Better Science
(https://techport.nasa.gov/image/102227)



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Project Image NIST in Space: Better Remote Sensors for Better Science
(https://techport.nasa.gov/image/102192)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
ITT Exelis Geospatial Systems

Responsible Program:
NASA Innovative Advanced Concepts

Project Management

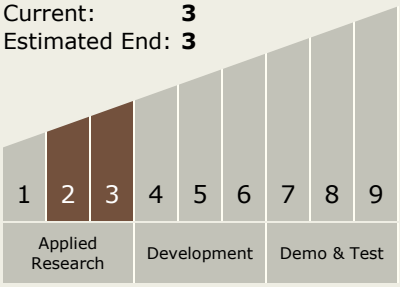
Program Director:
Jason E Derleth

Program Manager:
Eric A Eberly

Principal Investigator:
Joseph P Predina

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.4 Information Processing
    - TX11.4.4 Collaborative Science and Engineering

Target Destination

Earth